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A three way videoconference call is illustrated in figure 17. Caller 1, caller 2 and caller 3 are connected over an ethernet communication system. Each caller broadcasts multimedia digital packets to the other two callers. The connection may be expanded to more than three callers. Each caller will see a video image of all the other conferences on their screen in separate windows, as well as hear the conversation and view collaborative data.

An alternate embodiment for a three way videoconference call is illustrated in figure 19. Two callers (1 and 3) are on ethernet. Another caller, 2 is connected by modem. Caller 3 links caller 1 to caller 2. To link callers 1 and 2, caller 3 rebroadcasts received data packets from caller 1 over ethernet, to caller 3 over modem, and vice versa.

What is claimed is:

1. A method for communicating a plurality of digital signals over a communication system, wherein each of said plurality of digital signals represents one of a plurality of media sources, said method comprising:

encoding each of said plurality of digital signals into a plurality of digital packets respectively corresponding to each of said plurality of digital media;

assigning a priority to each of said plurality of digital packets;

transmitting said plurality of digital packets over said communication system in substantially said order of said assigned priority;

receiving said plurality of digital packets transmitted over said communication system; and

processing said received plurality of digital packets in substantially said order of said assigned priority.

2. A method in accordance with claim 1, wherein said plurality of media sources corresponds to a video source and an audio source respectively, said method further comprising:

encoding an audio packet corresponding to said audio source;

encoding a video packet corresponding to said video source;

assigning a first priority to said audio packet; and

assigning a second priority to said video packet,

said first priority being greater than said second priority,

whereby said audio packet has a higher priority than said video packet.

3. A method in accordance with claim 1, wherein said plurality of media sources corresponds to a video source, an audio source and a text/graphics source respectively, said method further comprising:

encoding an audio packet corresponding to said audio source;

encoding a video packet corresponding to said video source;

encoding a text/graphics packet corresponding to said text/graphics source;

assigning a first priority to said audio packet;

assigning a second priority to said video packet; and

assigning a third priority to said text/graphics packet;

said first priority being greater than said second priority, and said second priority being greater than said third priority, whereby said audio packet has a higher priority than said video packet, and said video packet has a higher priority than said text/graphic packet.

4. A method in accordance with claim 1, wherein said step of transmitting said plurality of digital packets over said communication system in substantially said order of said assigned priority further comprises:

providing a queue for holding said plurality of digital packets respectively corresponding to each of said plurality of digital media prior to transmission over said communication system;

placing successive ones of said plurality of digital packets in said queue in order said assigned priority; and

transmitting the first digital packet of said queue over said communication system.

5. A method in accordance with claim 1, wherein said step of processing said received plurality of digital packets in substantially said order of said assigned priority, further comprises:

processing one of said received plurality of digital packets having the highest priority before processing any other of said received plurality of digital packets;

processing the remainder of said received plurality of digital

packets substantially simultaneously as multiple tasks by processing each of said remainder of said received plurality of digital packets in proportion to said assigned priority respectively.

6. A method in accordance with claim 1, wherein said step of processing said received plurality of digital packets in substantially said order of said assigned priority further comprises:

processing one of said received plurality of digital packets to recover a given one of said plurality of digital signals, said recovered digital signal representing a given one of said plurality of media sources;

delaying said recovered given digital signal by a given delay to form a delayed recovered digital signal; and

playing back said delayed recovered given digital signal to form a delayed replay of said given one of said plurality of media sources.

7. A method in accordance with claim 6, wherein said step of delaying said recovered given digital signal to form a delayed recovered digital signal, further comprises:

setting said given delay substantially equal to the delay of said communication system.

8. A method in accordance with claim 7, wherein said step of setting said given delay substantially equal to the delay of said communication system, further comprises:

measuring the delay of said communication system; and

setting said given delay substantially equal to said measured delay.

9. A method for transmitting a plurality of digital signals over a communication system, wherein each of said plurality of digital signals represents one of a plurality of media sources, said transmitting method comprising:

encoding each of said plurality of digital signals into a plurality of digital packets respectively corresponding to each of said plurality of digital media;

assigning a priority to each of said plurality of digital packets; and

transmitting said plurality of digital packets over said communication system in substantially said order of said

assigned priority.

10. A method in accordance with claim 9, wherein said plurality of media sources corresponds to a video source and an audio source respectively, said method further comprising:

encoding an audio packet corresponding to said audio source;

encoding a video packet corresponding to said video source;

assigning a first priority to said audio packet; and

assigning a second priority to said video packet,

said first priority being greater than said second priority, whereby said audio packet has a higher priority than said video packet.

11. A method in accordance with claim 9, wherein said plurality of media sources corresponds to a video source, an audio source and a text/graphics source respectively, said method further comprising:

encoding an audio packet corresponding to said audio source;

encoding a video packet corresponding to said video source;

encoding a text/graphics packet corresponding to said text/graphics source;

assigning a first priority to said audio packet;

assigning a second priority to said video packet; and

assigning a third priority to said text/graphics packet;

said first priority being greater than said second priority, and said second priority being greater than said third priority, whereby said audio packet has a higher priority than said video packet, and said video packet has a higher priority than said text/graphic packet.

12. A method in accordance with claim 9, wherein said step of transmitting said plurality of digital packets over said communication system in substantially said order of said assigned priority further comprises:

providing a queue for holding said plurality of digital packets respectively corresponding to each of said plurality of digital media prior to transmission over said communication system;

placing successive ones of said plurality of digital packets

in said queue in order said assigned priority; and

transmitting the first digital packet of said queue over said communication system.

13. In a system for communicating a plurality of digital signals over a communication system, wherein each of said plurality of digital signals represents one of a plurality of media sources, said system including a transmitter encoding each of said plurality of digital signals into a plurality of digital packets respectively corresponding to each of said plurality of digital media, assigning a priority to each of said plurality of digital packets, and transmitting said plurality of digital packets over said communication system in substantially said order of said assigned priority, a receiver method comprising:

receiving said plurality of digital packets transmitted over said communication system;

detecting said assigned priority of each of said received plurality of digital packets; and

processing each of said received plurality of digital packets in substantially said order of said detected assigned priority.

14. A method in accordance with claim 13, wherein said step of processing said received plurality of digital packets in substantially said order of said assigned priority, further comprises:

processing one of said received plurality of digital packets having the highest priority before processing any other of said received plurality of digital packets;

processing the remainder of said received plurality of digital packets substantially simultaneously as multiple tasks by processing each of said remainder of said received plurality of digital packets in proportion to said assigned priority respectively.

15. A method in accordance with claim 13, wherein said step of processing said received plurality of digital packets in substantially said order of said assigned priority further comprises:

processing one of said received plurality of digital packets to recover a given one of said plurality of digital signals, said recovered digital signal representing a given one of said plurality of media sources;

delaying said recovered given digital signal by a given delay

to form a delayed recovered digital signal; and

playing back said delayed recovered given digital signal to form a delayed replay of said given one of said plurality of media sources.

16. A method in accordance with claim 15, wherein said step of delaying said recovered given digital signal to form a delayed recovered digital signal, further comprises:

setting said given delay substantially equal to the delay of said communication system.

17. A method in accordance with claim 16 wherein said step of setting said given delay substantially equal to the delay of said communication system, further comprises:

measuring the delay of said communication system; and

setting said given delay substantially equal to said measured delay.

18. A method for communicating between first, second and third callers over a communication system, wherein each one of said first, second and third callers transmits and receives a plurality

of digital signals to and from each of said other two callers respectively, and wherein each of said plurality of digital signals represents one of a plurality of media sources, said method comprising:

generating at said first caller a plurality of digital signals, each of said plurality of digital signals representing one of a plurality of media sources,

encoding at said first caller, each of said plurality of digital signals into a plurality of digital packets respectively corresponding to each of said plurality of digital media;

transmitting from said first caller said plurality of digital packets over said communication system;

receiving at said second caller said plurality of digital packets transmitted over said communication system;

processing at said second caller said received plurality of digital packets;

receiving at said third caller said plurality of digital packets transmitted over said communication system; and

processing at said third caller said received plurality of digital packets;

whereby a plurality of media sources is simultaneously transmitted by broadcast from said first caller to both of said second and third callers.

19. -A method in accordance with claim 18, wherein said method further comprises:

assigning a priority to each of said plurality of digital packets at said first caller;

transmitting from said first caller said plurality of digital packets over said communication system in substantially said order of said assigned priority;

processing said received plurality of digital packets at said second caller in substantially said order of said assigned priority; and

processing said received plurality of digital packets at said third caller in substantially said order of said assigned priority.

20. A method in accordance with claim 19, wherein said plurality

of media sources corresponds to a video source and an audio source respectively, said method further comprising:

encoding an audio packet corresponding to said audio source;

encoding a video packet corresponding to said video source;

assigning a first priority to said audio packet; and

assigning a second priority to said video packet,

said first priority being greater than said second priority, whereby said audio packet has a higher priority than said video packet.

- (2) 21. A method in accordance with claim 19, wherein said plurality of media sources corresponds to a video source, an audio source and a text/graphics source respectively, said method further comprising:

encoding an audio packet corresponding to said audio source;

encoding a video packet corresponding to said video source;

encoding a text/graphics packet corresponding to said text/graphics source;

assigning a first priority to said audio packet;

assigning a second priority to said video packet; and

assigning a third priority to said text/graphics packet;

said first priority being greater than said second priority, and said second priority being greater than said third priority, whereby said audio packet has a higher priority than said video packet, and said video packet has a higher priority than said text/graphic packet.

22. A method in accordance with claim 19, wherein said step of transmitting said plurality of digital packets over said communication system in substantially said order of said assigned priority further comprises:

providing a queue for holding said plurality of digital packets respectively corresponding to each of said plurality of digital media prior to transmission over said communication system;

placing successive ones of said plurality of digital packets in said queue in order said assigned priority; and

transmitting the first digital packet of said queue over said

communication system.

23. A method in accordance with claim 19, wherein said step of processing said received plurality of digital packets in substantially said order of said assigned priority, further comprises:

processing one of said received plurality of digital packets having the highest priority before processing any other of said received plurality of digital packets;

processing the remainder of said received plurality of digital packets substantially simultaneously as multiple tasks by processing each of said remainder of said received plurality of digital packets in proportion to said assigned priority respectively.

24. A method in accordance with claim 19, wherein said step of processing said received plurality of digital packets at said second caller in substantially said order of said assigned priority further comprises:

processing one of said received plurality of digital packets to recover a given one of said plurality of digital signals, said recovered digital signal representing a given one of said plurality of media sources;

delaying said recovered given digital signal by a given delay to form a delayed recovered digital signal; and

playing back said delayed recovered given digital signal to form a delayed replay of said given one of said plurality of media sources.

25. A method in accordance with claim 24, wherein said step of delaying said recovered given digital signal to form a delayed recovered digital signal, further comprises:

setting said given delay substantially equal to the delay of said communication system.

26. A method in accordance with claim 25, wherein said step of setting said given delay substantially equal to the delay of said communication system, further comprises:

measuring the delay of said communication system; and

setting said given delay substantially equal to said measured delay.

27. A method for communicating between first, second and third callers over first and second communication systems, wherein each of said first and second callers transmits and receives a plurality

of digital signals to and from each other over said first communication system, each of said second and third callers transmits and receives a plurality of digital signals to and from each other over said second communication system, and wherein each of said plurality of digital signals represents one of a plurality of media sources, said method comprising:

generating at said first caller a plurality of digital signals, each of said plurality of digital signals representing one of a plurality of media sources,

encoding at said first caller, each of said plurality of digital signals into a plurality of digital packets respectively corresponding to each of said plurality of digital media;

transmitting from said first caller said plurality of digital packets over said first communication system;

receiving at said second caller said plurality of digital packets transmitted over said first communication system;

processing at said second caller said received plurality of digital packets;

retransmitting from said second caller said plurality of

digital packets over said second communication system;

receiving at said third caller said plurality of digital packets transmitted over said second communication system; and

processing at said third caller said received plurality of digital packets;

whereby a plurality of media sources is transmitted from said first caller to each of said second and third callers.

28. A method in accordance with claim 27, wherein said method further comprises:

assigning a priority to each of said plurality of digital packets at said first caller;

transmitting from said first caller said plurality of digital packets over said first communication system in substantially said order of said assigned priority;

processing said received plurality of digital packets at said second caller in substantially said order of said assigned priority; and

retransmitting from said first caller said plurality of

digital packets over said second communication system in substantially said order of said assigned priority;

processing said received plurality of digital packets at said third caller in substantially said order of said assigned priority.

29. A method in accordance with claim 28, wherein said plurality of media sources corresponds to a video source and an audio source respectively, said method further comprising:

encoding an audio packet corresponding to said audio source;

encoding a video packet corresponding to said video source;

assigning a first priority to said audio packet; and

assigning a second priority to said video packet,

said first priority being greater than said second priority, whereby said audio packet has a higher priority than said video packet.

30. A method in accordance with claim 28, wherein said plurality of media sources corresponds to a video source, an audio source and a text/graphics source respectively, said method further comprising:

encoding an audio packet corresponding to said audio source;

encoding a video packet corresponding to said video source;

encoding a text/graphics packet corresponding to said text/graphics source;

assigning a first priority to said audio packet;

assigning a second priority to said video packet; and

assigning a third priority to said text/graphics packet;

said first priority being greater than said second priority, and said second priority being greater than said third priority, whereby said audio packet has a higher priority than said video packet, and said video packet has a higher priority than said text/graphic packet.

31. A method in accordance with claim 28, wherein said step of transmitting said plurality of digital packets over said communication system in substantially said order of said assigned priority further comprises:

providing a queue for holding said plurality of digital packets respectively corresponding to each of said plurality

of digital media prior to transmission over said communication system;

placing successive ones of said plurality of digital packets in said queue in order said assigned priority; and

transmitting the first digital packet of said queue over said communication system.

32. A method in accordance with claim 28, wherein said step of processing said received plurality of digital packets in substantially said order of said assigned priority at said second and third callers, each further comprises:

processing one of said received plurality of digital packets having the highest priority before processing any other of said received plurality of digital packets;

processing the remainder of said received plurality of digital packets substantially simultaneously as multiple tasks by processing each of said remainder of said received plurality of digital packets in proportion to said assigned priority respectively.

33. A method in accordance with claim 28, wherein said step of processing said received plurality of digital packets in

substantially said order of said assigned priority at said second and third callers each further comprises:

processing one of said received plurality of digital packets to recover a given one of said plurality of digital signals, said recovered digital signal representing a given one of said plurality of media sources;

delaying said recovered given digital signal by a given delay to form a delayed recovered digital signal; and

playing back said delayed recovered given digital signal to form a delayed replay of said given one of said plurality of media sources.

34. A method in accordance with claim 33, wherein said step of delaying said recovered given digital signal to form a delayed recovered digital signal, further comprises:

setting said given delay substantially equal to the delay of said communication system.

35. A method in accordance with claim 34, wherein said step of setting said given delay substantially equal to the delay of said communication system, further comprises:

measuring the delay of said communication system; and

setting said given delay substantially equal to said measured delay.

36. An apparatus for communicating a plurality of digital signals over a communication system, wherein each of said plurality of digital signals represents one of a plurality of media sources, said apparatus comprising:

means for encoding each of said plurality of digital signals into a plurality of digital packets respectively corresponding to each of said plurality of digital media;

means for assigning a priority to each of said plurality of digital packets;

means for transmitting said plurality of digital packets over said communication system in substantially said order of said assigned priority;

means for receiving said plurality of digital packets transmitted over said communication system; and

means for processing said received plurality of digital packets in substantially said order of said assigned priority.

37. An apparatus in accordance with claim 36, wherein said plurality of media sources corresponds to a video source and an audio source respectively, said apparatus further comprising:

means for encoding an audio packet corresponding to said audio source;

means for encoding a video packet corresponding to said video source;

means for assigning a first priority to said audio packet; and

means for assigning a second priority to said video packet,

said first priority being greater than said second priority, whereby said audio packet has a higher priority than said video packet.

38. An apparatus in accordance with claim 36, wherein said plurality of media sources corresponds to a video source, an audio source and a text/graphics source respectively, said apparatus further comprising:

means for encoding an audio packet corresponding to said audio source;

means for encoding a video packet corresponding to said video source;

means for encoding a text/graphics packet corresponding to said text/graphics source;

means for assigning a first priority to said audio packet;

means for assigning a second priority to said video packet;
and

means for assigning a third priority to said text/graphics packet;

said first priority being greater than said second priority,
and said second priority being greater than said third priority, whereby said audio packet has a higher priority than said video packet, and said video packet has a higher priority than said text/graphic packet.

39. An apparatus in accordance with claim 36, wherein said means for transmitting said plurality of digital packets over said communication system in substantially said order of said assigned priority further comprises:

means for providing a queue for holding said plurality of

digital packets respectively corresponding to each of said plurality of digital media prior to transmission over said communication system;

means for placing successive ones of said plurality of digital packets in said queue in order said assigned priority; and

means for transmitting the first digital packet of said queue over said communication system.

40. An apparatus in accordance with claim 36, wherein said means for processing said received plurality of digital packets in substantially said order of said assigned priority, further comprises:

means for processing one of said received plurality of digital packets having the highest priority before processing any other of said received plurality of digital packets;

means for processing the remainder of said received plurality of digital packets substantially simultaneously as multiple tasks by processing each of said remainder of said received plurality of digital packets in proportion to said assigned priority respectively.

41. An apparatus in accordance with claim 36, wherein said means

for processing said received plurality of digital packets in substantially said order of said assigned priority further comprises:

means for processing one of said received plurality of digital packets to recover a given one of said plurality of digital signals, said recovered digital signal representing a given one of said plurality of media sources;

means for delaying said recovered given digital signal by a given delay to form a delayed recovered digital signal; and

means for playing back said delayed recovered given digital signal to form a delayed replay of said given one of said plurality of media sources.

42. An apparatus in accordance with claim 41, wherein said means for delaying said recovered given digital signal to form a delayed recovered digital signal, further comprises:

means for setting said given delay substantially equal to the delay of said communication system.

43. An apparatus in accordance with claim 42, wherein said means for setting said given delay substantially equal to the delay of said communication system, further comprises:

means for measuring the delay of said communication system;
and

means for setting said given delay substantially equal to said
measured delay.

44. An apparatus for transmitting a plurality of digital signals
over a communication system, wherein each of said plurality of
digital signals represents one of a plurality of media sources,
said transmitting apparatus comprising:

means for encoding each of said plurality of digital signals
into a plurality of digital packets respectively corresponding
to each of said plurality of digital media;

means for assigning a priority to each of said plurality of
digital packets; and

means for transmitting said plurality of digital packets over
said communication system in substantially said order of said
assigned priority.

45. An apparatus in accordance with claim 44, wherein said
plurality of media sources corresponds to a video source and an
audio source respectively, said apparatus further comprising:

means for encoding an audio packet corresponding to said audio source;

means for encoding a video packet corresponding to said video source;

means for assigning a first priority to said audio packet; and

means for assigning a second priority to said video packet,

said first priority being greater than said second priority, whereby said audio packet has a higher priority than said video packet.

46. An apparatus in accordance with claim 44, wherein said plurality of media sources corresponds to a video source, an audio source and a text/graphics source respectively, said apparatus further comprising:

means for encoding an audio packet corresponding to said audio source;

means for encoding a video packet corresponding to said video source;

means for encoding a text/graphics packet corresponding to

said text/graphics source;

means for assigning a first priority to said audio packet;

means for assigning a second priority to said video packet;
and

means for assigning a third priority to said text/graphics
packet;

said first priority being greater than said second priority,
and said second priority being greater than said third
priority, whereby said audio packet has a higher priority than
said video packet, and said video packet has a higher priority
than said text/graphic packet.

47. An apparatus in accordance with claim 44, wherein said means
for transmitting said plurality of digital packets over said
communication system in substantially said order of said assigned
priority further comprises:

means for providing a queue for holding said plurality of
digital packets respectively corresponding to each of said
plurality of digital media prior to transmission over said
communication system;

means for placing successive ones of said plurality of digital packets in said queue in order said assigned priority; and

means for transmitting the first digital packet of said queue over said communication system.

48. In a system for communicating a plurality of digital signals over a communication system, wherein each of said plurality of digital signals represents one of a plurality of media sources, said system including a transmitter encoding each of said plurality of digital signals into a plurality of digital packets respectively corresponding to each of said plurality of digital media, assigning a priority to each of said plurality of digital packets, and transmitting said plurality of digital packets over said communication system in substantially said order of said assigned priority, a receiver apparatus comprising:

means for receiving said plurality of digital packets transmitted over said communication system;

means for detecting said assigned priority of each of said received plurality of digital packets; and

means for processing each of said received plurality of digital packets in substantially said order of said detected assigned priority.

49. An apparatus in accordance with claim 48, wherein said means for processing said received plurality of digital packets in substantially said order of said assigned priority, further comprises:

means for processing one of said received plurality of digital packets having the highest priority before processing any other of said received plurality of digital packets;

means for processing the remainder of said received plurality of digital packets substantially simultaneously as multiple tasks by processing each of said remainder of said received plurality of digital packets in proportion to said assigned priority respectively.

50. An apparatus in accordance with claim 48, wherein said means for processing said received plurality of digital packets in substantially said order of said assigned priority further comprises:

means for processing one of said received plurality of digital packets to recover a given one of said plurality of digital signals, said recovered digital signal representing a given one of said plurality of media sources;

means for delaying said recovered given digital signal by a given delay to form a delayed recovered digital signal; and

means for playing back said delayed recovered given digital signal to form a delayed replay of said given one of said plurality of media sources.

51. An apparatus in accordance with claim 50, wherein said means for delaying said recovered given digital signal to form a delayed recovered digital signal, further comprises:

means for setting said given delay substantially equal to the delay of said communication system.

52. An apparatus in accordance with claim 51, wherein said means for setting said given delay substantially equal to the delay of said communication system, further comprises:

means for measuring the delay of said communication system;
and

means for setting said given delay substantially equal to said measured delay.

53. An apparatus for communicating between first, second and third

callers over a communication system, wherein each one of said first, second and third callers transmits and receives a plurality of digital signals to and from each of said other two callers respectively, and wherein each of said plurality of digital signals represents one of a plurality of media sources, said apparatus comprising:

means for generating at said first caller a plurality of digital signals, each of said plurality of digital signals representing one of a plurality of media sources,

means for encoding at said first caller, each of said plurality of digital signals into a plurality of digital packets respectively corresponding to each of said plurality of digital media;

means for transmitting from said first caller said plurality of digital packets over said communication system;

means for receiving at said second caller said plurality of digital packets transmitted over said communication system;

means for processing at said second caller said received plurality of digital packets;

means for receiving at said third caller said plurality of

digital packets transmitted over said communication system;
and

means for processing at said third caller said received plurality of digital packets;

whereby a plurality of media sources is simultaneously transmitted by broadcast from said first caller to both of said second and third callers.

54. An apparatus in accordance with claim 53, wherein said apparatus further comprises:

means for assigning a priority to each of said plurality of digital packets at said first caller;

means for transmitting from said first caller said plurality of digital packets over said communication system in substantially said order of said assigned priority;

means for processing said received plurality of digital packets at said second caller in substantially said order of said assigned priority; and

means for processing said received plurality of digital packets at said third caller in substantially said order of

said assigned priority.

55. An apparatus in accordance with claim 54, wherein said plurality of media sources corresponds to a video source and an audio source respectively, said apparatus further comprising:

means for encoding an audio packet corresponding to said audio source;

means for encoding a video packet corresponding to said video source;

means for assigning a first priority to said audio packet; and

means for assigning a second priority to said video packet,

said first priority being greater than said second priority, whereby said audio packet has a higher priority than said video packet.

56. An apparatus in accordance with claim 54, wherein said plurality of media sources corresponds to a video source, an audio source and a text/graphics source respectively, said apparatus further comprising:

means for encoding an audio packet corresponding to said audio

source;

means for encoding a video packet corresponding to said video source;

means for encoding a text/graphics packet corresponding to said text/graphics source;

means for assigning a first priority to said audio packet;

means for assigning a second priority to said video packet;
and

means for assigning a third priority to said text/graphics packet;

said first priority being greater than said second priority,
and said second priority being greater than said third priority, whereby said audio packet has a higher priority than said video packet, and said video packet has a higher priority than said text/graphic packet.

57. An apparatus in accordance with claim 54, wherein said means for transmitting said plurality of digital packets over said communication system in substantially said order of said assigned priority further comprises:

means for providing a queue for holding said plurality of digital packets respectively corresponding to each of said plurality of digital media prior to transmission over said communication system;

means for placing successive ones of said plurality of digital packets in said queue in order said assigned priority; and

means for transmitting the first digital packet of said queue over said communication system.

58. An apparatus in accordance with claim 54, wherein said means for processing said received plurality of digital packets in substantially said order of said assigned priority, further comprises:

means for processing one of said received plurality of digital packets having the highest priority before processing any other of said received plurality of digital packets;

means for processing the remainder of said received plurality of digital packets substantially simultaneously as multiple tasks by processing each of said remainder of said received plurality of digital packets in proportion to said assigned priority respectively.

59. An apparatus in accordance with claim 54, wherein said means for processing said received plurality of digital packets at said second caller in substantially said order of said assigned priority further comprises:

means for processing one of said received plurality of digital packets to recover a given one of said plurality of digital signals, said recovered digital signal representing a given one of said plurality of media sources;

means for delaying said recovered given digital signal by a given delay to form a delayed recovered digital signal; and

means for playing back said delayed recovered given digital signal to form a delayed replay of said given one of said plurality of media sources.

60. An apparatus in accordance with claim 59, wherein said means for delaying said recovered given digital signal to form a delayed recovered digital signal, further comprises:

means for setting said given delay substantially equal to the delay of said communication system.

61. An apparatus in accordance with claim 60, wherein said means for setting said given delay substantially equal to the delay of

said communication system, further comprises:

means for measuring the delay of said communication system;
and

means for setting said given delay substantially equal to said
measured delay.

62. An apparatus for communicating between first, second and third callers over first and second communication systems, wherein each of said first and second callers transmits and receives a plurality of digital signals to and from each other over said first communication system, each of said second and third callers transmits and receives a plurality of digital signals to and from each other over said second communication system, and wherein each of said plurality of digital signals represents one of a plurality of media sources, said apparatus comprising:

means for generating at said first caller a plurality of digital signals, each of said plurality of digital signals representing one of a plurality of media sources,

means for encoding at said first caller, each of said plurality of digital signals into a plurality of digital packets respectively corresponding to each of said plurality of digital media;

means for transmitting from said first caller said plurality of digital packets over said first communication system;

means for receiving at said second caller said plurality of digital packets transmitted over said first communication system;

means for processing at said second caller said received plurality of digital packets;

means for retransmitting from said second caller said plurality of digital packets over said second communication system;

means for receiving at said third caller said plurality of digital packets transmitted over said second communication system; and

means for processing at said third caller said received plurality of digital packets;

whereby a plurality of media sources is transmitted from said first caller to each of said second and third callers.

63. An apparatus in accordance with claim 62, wherein said apparatus further comprises:

means for assigning a priority to each of said plurality of digital packets at said first caller;

means for transmitting from said first caller said plurality of digital packets over said first communication system in substantially said order of said assigned priority;

means for processing said received plurality of digital packets at said second caller in substantially said order of said assigned priority; and

means for retransmitting from said first caller said plurality of digital packets over said second communication system in substantially said order of said assigned priority;

means for processing said received plurality of digital packets at said third caller in substantially said order of said assigned priority.

64. An apparatus in accordance with claim 63, wherein said plurality of media sources corresponds to a video source and an audio source respectively, said apparatus further comprising:

means for encoding an audio packet corresponding to said audio source;

means for encoding a video packet corresponding to said video source;

means for assigning a first priority to said audio packet; and

means for assigning a second priority to said video packet,

said first priority being greater than said second priority, whereby said audio packet has a higher priority than said video packet.

65. An apparatus in accordance with claim 63, wherein said plurality of media sources corresponds to a video source, an audio source and a text/graphics source respectively, said apparatus further comprising:

means for encoding an audio packet corresponding to said audio source;

means for encoding a video packet corresponding to said video source;

means for encoding a text/graphics packet corresponding to said text/graphics source;

means for assigning a first priority to said audio packet;

means for assigning a second priority to said video packet;
and

means for assigning a third priority to said text/graphics
packet;

said first priority being greater than said second priority,
and said second priority being greater than said third
priority, whereby said audio packet has a higher priority than
said video packet, and said video packet has a higher priority
than said text/graphic packet.

66. An apparatus in accordance with claim 63, wherein said means
for transmitting said plurality of digital packets over said
communication system in substantially said order of said assigned
priority further comprises:

means for providing a queue for holding said plurality of
digital packets respectively corresponding to each of said
plurality of digital media prior to transmission over said
communication system;

means for placing successive ones of said plurality of digital
packets in said queue in order said assigned priority; and

means for transmitting the first digital packet of said queue

over said communication system.

67. An apparatus in accordance with claim 63, wherein said means for processing said received plurality of digital packets in substantially said order of said assigned priority at said second and third callers, each further comprises:

means for processing one of said received plurality of digital packets having the highest priority before processing any other of said received plurality of digital packets;

means for processing the remainder of said received plurality of digital packets substantially simultaneously as multiple tasks by processing each of said remainder of said received plurality of digital packets in proportion to said assigned priority respectively.

68. An apparatus in accordance with claim 63, wherein said means for processing said received plurality of digital packets in substantially said order of said assigned priority at said second and third callers each further comprises:

means for processing one of said received plurality of digital packets to recover a given one of said plurality of digital signals, said recovered digital signal representing a given one of said plurality of media sources;

means for delaying said recovered given digital signal by a given delay to form a delayed recovered digital signal; and

means for playing back said delayed recovered given digital signal to form a delayed replay of said given one of said plurality of media sources.

69. An apparatus in accordance with claim 68, wherein said means for delaying said recovered given digital signal to form a delayed recovered digital signal, further comprises:

setting said given delay substantially equal to the delay of said communication system.

70. An apparatus in accordance with claim 69, wherein said means for setting said given delay substantially equal to the delay of said communication system, further comprises:

means for measuring the delay of said communication system;
and

means for setting said given delay substantially equal to said measured delay.